

CLAIMS

What is claimed is:

1. A method comprising:

identifying one or more short windows of a first type and one or more short windows of a second type within a frame of data using energy associated with each of a plurality of short windows within the frame;

grouping the one or more short windows of the first type and the one or more short windows of the second type into two preliminary groups based on a window type of each of the plurality of short windows; and

if a number of short windows in one of the two preliminary groups exceeds a threshold number, further grouping short windows in the one of the two preliminary groups into at least two groups.
2. The method of claim 1 wherein the plurality of short windows within the frame consists of eight short windows.
3. The method of claim 1 further comprising:

determining a final number of short window groups for the frame.
4. The method of claim 3 further comprising:

determining a number of short windows in each of the final number of short window groups.

5. The method of claim 1 wherein identifying one or more short windows of a first type and one or more short windows of a second type comprises:

computing energy of each of the plurality of short windows within the frame;

finding one of the plurality of short windows with a minimum energy;

calculating an offset energy value for each of the plurality of windows;

calculating a mean offset energy value for the frame; and

determining a type of each of the plurality of short windows based on the mean offset energy value and the offset energy value of said each of the plurality of short windows.

6. The method of claim 5 wherein the energy of each of the plurality of short windows is computed using an expression

$$\text{win_energy}[\text{win_index}] = \log[\text{sum}(\text{coef}[i] * \text{coef}[i]) + 0.5],$$

wherein [win_index] identifies a window number within the frame, win_energy is the resulting energy, and coef[i] is an *i*-th spectral coefficient within the short window.

7. The method of claim 5 wherein the offset is calculated for each of the plurality of short windows by subtracting the minimum energy from the energy of said each of the plurality of short windows.

8. The method of claim 5 wherein determining a type of each of the plurality of short windows comprises:

deciding that said each of the plurality of short windows is of the first type if the offset energy value of said each of the plurality of short windows is greater than the mean offset energy value; and

deciding that said each of the plurality of short windows is of the second type if the offset energy value of said each of the plurality of short windows is not greater than the mean offset energy value.

9. The method of claim 1 further comprising:

adjusting a type of each of the plurality of short windows whose type is likely to be incorrect to match the type of adjacent short windows if the adjacent short windows are of the same type.

10. The method of claim 1 wherein grouping the one or more short windows of the first type and the one or more short windows of the second type into two preliminary groups comprises:

adding a first one of the plurality of short windows to a first preliminary group; and

adding each subsequent short window within the plurality of short windows to the first preliminary group if said each subsequent short window has the type of the first short window; and

upon encountering a subsequent short window with a type different from the type of the first window, creating a second preliminary group and calculating a number of short windows in the second preliminary group by subtracting a number of short windows in the first preliminary group from a total number of the plurality of short windows.

11. The method of claim 1 wherein the threshold number is any one of a predetermined number and a number of short windows in the other one of the two preliminary groups.

12. The method of claim 1 further comprising:

if a number of short windows in one of the two preliminary groups is equal to the threshold number, considering the two preliminary groups to be final groups for the frame.

13. A computer readable medium that provides instructions, which when executed on a processor cause the processor to perform a method comprising:

identifying one or more short windows of a first type and one or more short windows of a second type within a frame of data using energy associated with each of a plurality of short windows within the frame;

grouping the one or more short windows of the first type and the one or more short windows of the second type into two preliminary groups based on a window type of each of the plurality of short windows; and

if a number of short windows in one of the two preliminary groups exceeds a threshold number, further grouping short windows in the one of the two preliminary groups into at least two groups.

14. The computer readable medium of claim 13 wherein the plurality of short windows within the frame consists of eight short windows.

15. The computer readable medium of claim 13 wherein the method further comprises:

determining a final number of short window groups for the frame.

16. The computer readable medium of claim 15 wherein the method further comprises:

determining a number of short windows in each of the final number of short window groups.

17. A computerized system comprising:
- a memory; and
- at least one processor coupled to the memory, the at least one processor executing a set of instructions which cause the at least one processor to
- identify one or more short windows of a first type and one or more short windows of a second type within a frame of data using energy associated with each of a plurality of short windows within the frame,
- group the one or more short windows of the first type and the one or more short windows of the second type into two preliminary groups based on a window type of each of the plurality of short windows, and
- if a number of short windows in one of the two preliminary groups exceeds a threshold number, further group short windows in the one of the two preliminary groups into at least two groups.
18. The system of claim 17 wherein the plurality of short windows within the frame consists of eight short windows.
19. The system of claim 17 wherein the at least one processor executes a set of instructions which cause the at least one processor to further determine a final number of short window groups for the frame.

20. The system of claim 19 wherein the at least one processor executes a set of instructions which cause the at least one processor to further determine a number of short windows in each of the final number of short window groups.

21. An apparatus comprising:

means for identifying one or more short windows of a first type and one or more short windows of a second type within a frame of data using energy associated with each of a plurality of short windows within the frame;

means for grouping the one or more short windows of the first type and the one or more short windows of the second type into two preliminary groups based on a window type of each of the plurality of short windows; and

means for further grouping short windows in the one of the two preliminary groups into at least two groups if a number of short windows in one of the two preliminary groups exceeds a threshold number.